

Appl. No. 10/034,586  
Amrdr. dated June 23, 2006  
Reply to Office Action of March 23, 2006

### Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

### Listing of Claims

1-4. (Cancelled)

5. (Previously Presented) A catheter having a torque transmitting shaft, comprising:

an elongate shaft having a proximal end, a distal end, a lumen extending therethrough, a core member having a proximal end and distal end, an inner surface, and an outer surface, wherein the inner surface is in fluid communication with the lumen; and

a raised pattern of generally noncontiguous elements disposed on the outer surface, the raised pattern further comprising a plurality of bearing points,

wherein the bearing points are separated when the shaft is not being torqued and wherein at least two of the bearing points move toward one another when the shaft is torqued; and

wherein the raised pattern improves the transmission of torque along the elongate shaft.

6. (Original) The catheter in accordance with claim 5, wherein the raised pattern is formed by laser ablation.

7. (Original) The catheter in accordance with claim 5, wherein the raised pattern is formed by overmolding.

8. (Original) The catheter in accordance with claim 5, wherein the raised pattern is formed by hot die casting.

9. (Original) The catheter in accordance with claim 5, wherein the raised pattern is formed by embossing.

10. (Original) The catheter in accordance with claim 5, wherein the raised pattern is formed by extrusion.

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11. (Original) The catheter in accordance with claim 5, wherein the bearing points contact one another when the elongate shaft is torqued.

12. (Previously Presented) A method of generating torque transmittance within a catheter shaft, comprising the steps of:

providing a catheter comprising an elongate shaft having an outer surface; and  
disposing a raised pattern on the outer surface,

wherein the raised pattern forms means for improving the transmission of torque along the elongate shaft; and

wherein the raised pattern comprises a plurality of generally noncontiguous raised shapes, adjacent raised shapes being separated when the shaft is not under torque and at least two adjacent raised shapes move toward each other when the shaft is under torque.

13. (Original) The method in accordance with claim 12, wherein the catheter is a guide catheter.

14. (Original) The method in accordance with claim 12, wherein the catheter is a balloon catheter.

15. (Original) The method in accordance with claim 12, wherein the raised pattern is formed by laser ablation.

16. (Original) The method in accordance with claim 12, wherein the raised pattern is formed by overmolding.

17. (Original) The method in accordance with claim 12, wherein the raised pattern is formed by hot die casting.

18. (Original) The method in accordance with claim 12, wherein the raised pattern is formed by embossing.

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19. (Original) The method in accordance with claim 12, wherein the raised pattern is formed by extrusion.

20. (Original) The method in accordance with claim 12, wherein the raised pattern further comprises a plurality of bearing points.

21. (Original) The method in accordance with claim 20, wherein the bearing points contact one another when the elongate shaft is torqued.

22. (Original) The method in accordance with claim 21, wherein the bearing points transfer torque along the elongate shaft.

23. (Cancelled)

24. (Previously Presented) The method in accordance with claim 12, wherein adjacent raised shapes contact one another when the shaft is under torque.

25. (Previously Presented) A catheter having a torque transmitting shaft, comprising:  
an elongate shaft having an outer surface; and

a raised pattern comprising a plurality of generally noncontiguous raised elements disposed on the outer surface, wherein each of the plurality of elements is free from adjacent raised elements when the shaft is not under torsion and wherein at least two adjacent raised elements deflect toward one another when the shaft is under torsion.

26. (Previously Presented) The catheter of claim 25, wherein adjacent raised elements are separated by a channel therebetween.

27. (Previously Presented) The catheter of claim 25, wherein the raised elements are diamond-shaped.

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28. (Previously Presented) The catheter of claim 25, wherein adjacent raised elements contact one another when the shaft is under torsion.

29. (Previously Presented) The catheter of claim 25, wherein the raised pattern defines means for improving the transmission of torque along the elongate shaft while under torsion.

30. (Previously Presented) The catheter of claim 29, wherein the means for improving the transmission of torque comprises a plurality of bearing points.

31. (Previously Presented) The catheter of claim 30, wherein adjacent bearing points contact one another when the shaft is under torsion.

32. (Previously Presented) A catheter having a torque transmitting shaft, comprising:  
an elongate shaft having wall defining an inner surface and an outer surface;  
a plurality of raised elements integral with and extending from the outer surface, wherein adjacent raised elements are separated when the shaft is not under torsion and wherein at least two adjacent raised elements deflect toward one another when the shaft is under torsion.

33. (Previously Presented) The catheter of claim 32, wherein the raised elements are generally noncontiguous with one another.

34. (Previously Presented) The catheter of claim 32, wherein the raised elements are diamond-shaped.